UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
RESEARCH AND DEVELOPMENT

To: Bryan Symmes, Acting Division Director, National Program Chemicals Division, OPPT, OCSPP

From: Kris Thayer, Division Director, Chemical and Pollutant Assessment Division, CPHEA, ORD Kristina Thayer

Date: 26th March 2020

Subject: Updated and Peer Reviewed PCB Exposure Estimation Tool

The PCB Exposure Estimation Tool was developed in 2009 (Version 1.1) to help exposure/risk assessors estimate total PCB exposures. The Tool provides exposure estimates for school children (pre-school, elementary, middle and high school) and school staff, including teachers and other school personnel. School exposure pathways include indoor and outdoor air, indoor dust, and nearby outside soils. The Tool has also been used to calculate the maximum PCB concentration in indoor school air to which individuals could be exposed without exceeding the reference dose (RfD) for PCB Aroclor 1254 (the lower of the two RfDs available for PCB Aroclors; https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=389) when all other school and non-school PCB exposure pathways are set to average background levels.

EPA recently conducted a systematic review of the scientific literature to update the PCB Exposure Estimation Tool and Exposure Levels for Evaluating PCBs in Indoor School Air (ELEs). The goal of the systematic review was to identify and evaluate PCB exposure related studies that have been published since the PCB Exposure Estimation Tool was developed in 2009. A review of the scientific literature was conducted to determine whether any new data were available that would impact the input assumptions used in the Tool to calculate the ELEs. As a result of this systematic review, the PCB Exposure Estimation Tool was updated (Version 2.0) to include more recent data on background concentrations of PCBs in environmental media and updated exposure factors from the EPA's Exposure Factors Handbook: 2011 Edition and its 2017 updates.

Versar, Inc., an independent contractor, coordinated an external letter peer review of the updated PCB Exposure Estimation Tool (Version 2.0) and its use in selecting ELEs. The independent, external peer review was conducted for EPA's Center for Public Health and

Environmental Assessment (CPHEA), Office of Research and Development (ORD). Versar, Inc., selected three senior scientists with broad experience and demonstrated expertise in the area of human health exposure assessment and familiarity with PCBs: **Robert F. Herrick, Ph.D.,** Harvard School of Public Health (retired); **Keri C. Hornbuckle, Ph.D.,** University of Iowa; and **P. Barry Ryan, Ph.D.,** Emory University. The final product of the PCB Exposure Estimation Tool (Version 2.1) incorporates revisions in response to these reviewers' comments on Version 2.0.

With this memo we provide the following:

- The PCB Exposure Estimation Tool v2-1 (Excel file)
- The external peer review report, with EPA responses incorporated inline with the peer review comments ("PCB Air ELEs Response to Comments.pdf")